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Nature Study

for

The Elementary Schools

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FIRST GRADE.

Lessons with Animals.

BIRDS.—English Sparrow.
Common Crow.
Downy Woodpecker.

Pets and Domesticated Animals.

Home pets of the children.
School pets owned and cared for by the class.

Lessons with Plants.

Flower and vegetable raising.
Competitive flower raising.
Window gardens.

Gardens.

Lessons with soil and germination that will make the children more intelligent in the care of plants.

Trees.

Study one tree throughout the year.

Weather Conditions.

CHART.—Picture of day.
Picture of moon.

Stories of the winds.
Stories of the sun.
Stories of clouds.
Stories of the moon.
Stories of the stars.

Incidental lessons with plants, animals, and minerals brought by the children: Songs, stories, myths, poems, legends.

SECOND GRADE.

Lessons with Animals.

BIRDS.—English Sparrow.
Robin.
Common Crow.
Bluebird.
Chickadee.
Junco.

Pets and Domesticated Animals.

Home pets of the children.
School pet owned and cared for by the children.

Lessons with Plants.

Flowers and vegetable raising.
Competitive flower raising.
Window gardening.

Gardens.

Lessons with soil and germination that will make children more intelligent in the care of plants.

Trees.

Study two trees throughout the year. One of these may be the one previously studied in the first grade.

Weather Conditions.

CHART—Throughout the year.
CLOUDS—In a very general way.
Picture of the day.
Winds in a very general way.

Incidental lessons with plants, animals, and minerals brought by the children: Songs, stories, myths, poems, legends.

BIRDS.

First and second grades.

List of birds' names for study for the year. This list is suggestive only. It consists of birds common around the city and includes both winter and summer residents.

First Grade.

English Sparrow.
Downy Woodpecker.
Common Crow.

Second Grade.

English Sparrow.
Common Crow.

Review the two above, they must be types to city children.

Robin.
Bluebird.
Chickadee.
Junco.

For identification see Blanchan. Bird Neighbors.

For an insight into the meaning of the common actions of birds, for good stories from bird observers see the following:

English sparrow. Seton. Lives of the hunted, p. 107. "A Street Troubadour," being the adventures of a cock sparrow. (A story of considerable length.) John Burroughs. Winter Neighbors, p. 70.

Common Crow. Wm. J. Long. Wild Woodfolk, p. 101. Chapter entitled, Crow-Ways. The same can be found in Fowls of the Air, p. 235.

Olive Thorne Miller. Little Brothers of the Air. Chapter called the Comical Crow Baby, p. 236. (Good.)

Seton. Wild Animals I have Known. Silverspot. (Story of some length.) Olive Thorne Miller. Second Book of Birds, p. 117. (Good.)

John Burroughs. Wake Robin, p. 131.

John Burroughs. Riverby, p. 120. (Manners of the crow.)

Downy Woodpecker. John Burroughs. A Year in the Fields, p. 24. (Good.)

John Burroughs. Winter Neighbors, p. 84.

American Robin. Olive Thorne Miller. My Saturday Bird Class, p. 1.

Bluebird. Olive Thorne Miller. In Nesting Time. Chapter V. (Good.)

Chickadees. Wm. J. Long, Ways of Wood Folks, p. 135; also p. 143. (This is also found in Fowls of the Air. Wm. J. Long, p. 63.)

Wm. J. Long. Secrets of the Woods, p. 135.

John Burroughs, Wake Robin, p. 104. (Nest.)

The following references are for the general seasonal reading of the teacher, and are, as the writers indicate, interpretive.

Spring.

John Burroughs. Signs and Seasons.
Chap. IV, Tragedies of the Nest.
Chap. X, Bird Enemies.

John Burroughs. Winter Sunshine.
Chap. X, A March Chronicle.

John Burroughs. Birds and Poets.
Chap. IV, April.

John Burroughs. Wake Robin.
Chap. I, The Return of the Birds.
Chap. IV, Birds' Nests.
Chap. V, Spring at the Capital.

Wm. Hamilton Gibson. Sharp Eyes.
Chap. I, Spring (excellent general reference.)

Summer.

Wm. H. Gibson. Sharp Eyes.
Chap. II, Summer.

Fall.

John Burroughs. Winter Sunshine.
Chap. VI, Autumn tides.
Chap. II, The Apple.

Wm. Hamilton Gibson. Sharp Eyes.
Chap. III, Autumn. (Excellent general reference)

Winter.

John Burroughs. Signs and Seasons.
Chap. VII, Winter neighbors.
Chap. III, Hard fare.

Wm. H. Gibson. Sharp Eyes.
Chap. IV, Winter (Excellent general reference.)

So long as the English sparrow is our common city bird, it must be the one most studied by city children. We must have some bird for a standard with which to compare others. "As large as the English sparrow," "flies like the English sparrow, &c." So study this sparrow thoroughly even though we may be pretty well agreed that he is not a desirable bird when we recall birds that were here before he was introduced, and consider work they did, and he does not do, in the protection of trees. Indeed, "no doubt the time is near at hand when we shall have to wage serious war upon these sparrows as long as they have had to do it on the continent of Europe."—Burroughs. But it is perhaps best that we do not prejudice the children against him but let him settle his own case with them, leading them to draw conclusions from the knowledge they get, first hand, through continued observation of his ways.

Suggested Method.

Start with a story of some of the common things you see the sparrows do on your way to school—the simplest things are good if they are your own; you will tell them with a zest that can not be given the story of someone else.

Following is suggestive only. It is a true story.

Place; North Ave. and Linden, small triangle opposite grocery.

"Just outside the little triangle a number of English sparrows were busy as they could be picking up something from the ground. I wanted to see what they were eating so I walked around the triangle to get nearer. Then I saw one little fellow with a short tail which I took to be a young one. I also noticed a number of sparrows sitting on the low fence around the triangle. But I saw something else. The old cat that lives in the grocery on the corner was stealing across the street—so softly I think she must have been coming on her tiptoes for I could not hear her, and I was afraid the birds would not either, though she crept closer and closer to them while they kept on eating. But I think they must have seen her all the time, for when she came a little nearer, they

hopped away, all but the little fellow with the short tail ; and the old cat was just ready to spring on him, when flash ! came old Mother Sparrow from the fence crying, and, "fly, be quick !" she seemed to say to her little son. And he did. The old cat jumped, bounced, but just missed him."

Tell the children that to-morrow they may play sparrow game. All who know how to be little sparrows must look at the sparrows to learn how. That is—1. To get over the ground like sparrows (Hop). 2. To eat like sparrows. 3. Fly like sparrows. (If this seems too much to see in one day, give only one action and fit a story to this movement.)

The next day let all who can get over the ground like sparrows show you. (When children play bird they must be quiet. If a child starts hopping noisily, ask him if he heard the birds.) All who can eat like sparrows, stand and find crumbs on their desks. Can they fly like sparrows? Now select for your play. Who shall be the birds on the ground ? Who the Mother bird ? Who the old cat ? Who the little bird ? As you tell the story the children act it. A child will have to be alert to be the Mother sparrow and chirp in time to get the little one away from danger ; the little sparrow must be prompt or the old cat will have him and change the ending of the story. And because of this required alertness it affords an excellent training for the listless child who does not do things on time. Play the same game over and over. Children like the old ones bet. Only let the play be spontaneous ; anything like drill loses the point of the work which is the expression of their observation of bird actions through play.

Continue to tell simple stories of the things you have seen birds do and to play them until children see things which they wish to tell.

Draw the English sparrow. Free cutting of stories. Lay it in lentils, life size. Mould in clay.

Then let them tell their own stories and act them, such as are worth emphasizing, for the teacher must keep in mind a basis of selection. Not all reports will be worth using.

Use such Stories as

1. Show right feeling toward birds.
2. Care of the young.
3. Observation of birds' habits.
4. Have dramatic possibilities.
5. That lend themselves to blackboard illustration for reading lessons.
6. Lend themselves to free cutting or outlining in lentils.

As the year progresses do the children *as a class* take delight in telling the simple things they have seen the birds do? Is this always based on the personal, "I saw"? Do they enjoy playing little English sparrow stories that show action? Have they seen how he bathes in water (to keep himself clean)? In dust (to destroy bird lice)? Do they know some of the things he eats? Have they seen a nest? (This should be part of the property of every primary schoolroom; it is the only legitimate tangible thing about a bird that can come into it.) Do they know some of the things the birds put into the nest in the building of it? Have they traced where the bird found the material? Do they know where some of the birds stay at night? Have they noticed how some of the birds shake their feathers over their feet to keep them warm on cold days? Can they tell Jack (by his brown tie) from Jenny, (with her grey front)? Have they found things in the room the same colors as the sparrows? Do they begin to show that they are noticing the quarrelsome disposition of the sparrows? All these questions apply as well to the winter and spring as to the fall, since they suggest continued observation, not a list of facts to be learned. One can never teach all there is about a bird while it is alive.

Work toward these things, do not force them, nor is it expected that any one teacher will cover all of them; but play birds, model birds, draw them as well as talk about them, and, if the weather is hard on them, feed them.

The Sparrow's Nest.

Put together, odds and ends,
Picked up from enemies and friends,
See bits of thread, and bits of rag,
Just like a little rubbish bag.—MARY HOWITT.

For full poem, see Nature in Verse, p. 225.

The Downy Woodpecker.

Very few city children have seen this bird or are even likely to see it during the lessons about it. But there must be some bird lessons that are inspiration lessons, knowing that "when we have the bird in the heart we will find it in the bush." Make a story of this and tell the children of the little bird that makes a snug home for himself before cold weather sets in so he may be comfortable all winter. Tell them of the little round front door that opens into a little round hall that runs back a few inches into the tree, then turns and runs down a few inches, and there at the end of the hall in the heart of the tree is the nest of this little bird who lives all by himself all winter. "It is a satisfaction during the cold and stormy winter nights to know he is warm and cosey there in his retreat. When the day is bad and unfit to be abroad he is in there too."—Burroughs.

What do you think he has for breakfast? For dinner? He finds his meals on the trees. And what do you think he finds? Sometimes caterpillars that have rolled themselves up under the bark; sometimes eggs that old mother flies have hidden under the bark, and many other things that the old tree does not want. Sometimes he has trouble to get enough to drink when the streams are frozen. Tell how he looks. (See Blanchan for description and picture.) Tell the children, also, how some people put out things that they know he likes, for this bird to eat. A bone upon my window sill attracts both nuthatches and downy woodpeckers. A bone nailed to a tree a few feet from the window attracts crows as well as lesser birds. Even the slate-colored snow-bird, a seed eater, comes and nibbles at it occasionally. The bird that seems to think he has the best right to the bone both upon the tree and upon the sill is the downy woodpecker, my favorite neighbor among the winter birds."—BURROUGHS.

This is story work for the winter time, but looking for the woodpecker must extend into the spring. (There are two woodpecker holes in the same old trees, east of the Maryland Building, in Druid Hill park.)

Mold section of branch with round front door; mold woodpecker. Draw with colored crayons. Lay in lentils, life size. Free cutting.

The above lessons are suggestive of the two types of bird lessons—one, a series of observations of birds we can all see; two, the inspirational lesson in which we use pictures of the birds and stories of them to inspire children to look for them and to love them.

The Red Headed Woodpecker. Cooke. Nature Myths, p. 29. Appropriate for any woodpecker chat; have even the red patch on the head. The treatment of these birds suggests lessons with others. For information see references. Always consult Blanchan, Bird Neighbors.

The Common Crow. (See suggestions for English Sparrow and Downy Woodpecker.

Have the children watch for crows, especially toward night. Where did they see them? Point in the direction toward which they were flying. (Have the children tell by the setting sun.) Show how the crow flies. Show how the English sparrow flies. If the children have noticed the flight of these birds it will be apparent when they play "crow" and "English sparrow." If no difference is shown, have them look again. As they observe more keenly, they will imitate so closely that the class can tell whether they are crows or sparrows. Continue a minute or two quick, lively playing each day until you have the children observing keenly, when the imitation will take care of itself. In one first grade the children on a field lesson saw turkey buzzards flying over them, and the teacher noticed one little girl with her face uplifted and her little arms outstretched imitating the flight of the birds—a long float, then two or three flaps of the wings, then

a float, and the little girl seemed almost to float herself so intent was she upon the bird's motion. Children will, of course, catch from each other, *but do not show them how it is done and do not suggest by questions.*

Have they heard the crows talking to each other? Can they talk like a crow? An English sparrow? What are they saying to each other? Where do crows spend the night? (Crow roosts.) What do they eat? How can you help these birds in cold weather? Would you like to help them? Are they good friends of yours? (Rather neutral; the good they do destroying grubs is about balanced by the grain they eat.)

Why the crow is black. Wilson Nature Reader II, p. 141.

Caw! Caw! Caw!
Over in the meadow,
In a nest built of sticks
Lived a black mother-crow
And her little crows six.
"Caw," said the mother,
"We caw," said the six;
So they cawed and they called
In their nest built of sticks.

—Olive A. Wadsworth.

Chickadees. (See suggestions for English Sparrow and Downy Woodpecker.)

Many chickadees have been seen around the Maryland Building, in Druid Hill Park, and they are common in other parks and in the fields around the city. Look for one yourself and you will be apt to find him. Tell the children where you saw him, something you saw him doing; not forgetting to tell how he calls out his name, for he introduces himself. Tell them where this little bird will spend the winter. What can he find to eat? ("When heavy snow and, especially, sleet covers the trees, be sure to see that your chickadees are provided with food. A fresh bone with marrow and meat on it, or a piece of suet fastened to the limb of a tree and kept free

from ice from time to time may save dozens of these precious lives during the winter." Hodge, Nature Study and Life.)

Has he a home to stay in? When a cold night comes would you rather be a chickadee, an English sparrow, or a downy woodpecker? Do you think they ever have to go to bed without their supper? Without anything to drink when the streams are frozen? Again, what can you do to help them? Are the chickadees good friends of ours? How? (Probably no bird possesses a higher economic value than the chickadee. All summer he feeds on insects and all winter on the eggs which they lay on the twigs and bark and around the buds of trees. Professor Forbush reports finding 5500 eggs of plant lice in the crop of a chickadee, this number representing what the bird had gathered for a single breakfast. Hodge Nature Study and Life.) There is no bird that has been written about more lovingly than this one. You will appreciate his "sound heart and merry throat" for yourself as you know him better and realize the hard conditions that this little fellow comes up against. The merry throat may be making light of a very empty little larder, for the stout-hearted little black-cap keeps up a brave show under conditions that silence other birds.

Read to children The Chickadee, in Poetry of the Seasons, p. 318.

The Bluebirds. (See suggestions for English Sparrows and Downy Woodpecker.)

Bluebirds are the first birds to come and the last birds to leave. Indeed, some of them remain the entire season. The former superintendent of Druid Hill Park, Captain Cassell, reported bluebirds and redbirds coming to his house each morning during the winter for their breakfasts. They have been reported on the bird chart by children of different school buildings in widely separated localities. This may also be true of the robins, but they have not been so reported as yet. This winter may see the appearance of their names among the scarce winter birds.

Soon as you sing, then the springtime will come,
The robins will call and the honey bees hum,
And the dear little pussies, so cunning and gray,
Will sit in the willow trees over the way;
So, hurry, please do,
Little Bird Blue.

—From *Youth's Companion.*

The Robin. (See suggestions for English Sparrow and Downy Woodpecker.)

The North story of how the robin got his red breast. All the Year Round, part III, p. 59.

Examine the English sparrow's nest early in the spring; follow this with the story of The Oriole's Nest. Wiggin. The Story Hour. Spring.

Read "Who Stole the Birds Nest?" Graded Literature II, p. 151.

In the fall tell "The Crane Express;" in the Child's World.

"Hiawatha's Chickens;" Child Life II, p. 80.

"Hiawatha's Brothers;" Child Life, p. 82.

Play some of the bird songs the children sing. Page 10 Songs of the Child World, Gaynor, is instanced to illustrate this.

The children form a circle.
Choose the mother bird.
Choose the father bird.
Choose the three little birds.

As the children sing, "There are three baby birds in the wee, wee nest," the old mother bird stretches out her arms to cover the three little heads of the three little birds, and as they sing, "There are three hungry mouths to be filled when they cry," the father bird flies to the family with something to eat. And, "There they rock fast asleep 'neath the evening sky, Rock-a-by, Rock-a-by," finishes the song.

Play the poems in reading lessons.

Songs.—The Bird's Nest, Gaynor; songs of Child World, p. 10. The Woodpecker, Eleanor Smith; Primer, p. 82.

"They shall not hurt nor destroy in all thy holy mountain, for the earth shall be full of the knowledge of the Lord as the waters cover the sea."

ISAIAH XI.

PETS AND DOMESTICATED ANIMALS.

"Pets are the child's natural introduction to animal life. By their means the knowledge gained of the animal as a whole, its habits, life, individual character, intelligence, disposition, affection for its master, its health and well being, is infinitely more living and real than that imparted by any other method of instruction. By its associations with the child's spontaneous activities in caring for his pet, this knowledge becomes a part of his life and will thus enter into the formation of his character to exert its civilizing influence as long as he lives. Of how little value, compared with this, is learning of names, schemes of classification, or anatomical structures.

In the development of the child's emotional and moral life this relation to his living pet is of even greater importance. Nothing is better fitted to develop patience and conscientious carefulness than the daily attention to its needs. Unselfishness is fostered by this care and by the generous sharing of his good things with his humble friend." Hodge's Nature Study and Life.

The following steps are planned toward the accomplishment of the above. The order is not significant:

1. Stories of home pets.
2. The visits of these pets to the school.
3. The care of a school pet.

FIRST GRADE.

Stories of Home Pets. (September and October.)

Nature-Study for little children who have just left the home for the school, forming, as it does, a link between the two, makes much of the things that children play with every day—the pet dog, the cat, the rabbit, whatever they may have; or of such things of common interest as the squirrels in the

park. This is done in the nature of informal stories which the teacher leads the children to tell.

This free discussion of home pets is not a series of information lessons in which the teacher instructs the children, but a free time of story telling when the child does the talking, *not about dogs or cats*, but about *his* dog or cat or horse, as the case may be; the teacher taking advantage of these stories to educate a good healthy sentiment toward domesticated animals; possibly, in some cases to correct abuses.

Said one teacher, "The children bring so many of these stories, but what am to do with them?" Many things, either through seizing the significant stories, or the significant points in one story. For instance:

One child in this teacher's school told a story about having left her doggie at home burying a bone. This is a significant statement. Question how many other children have noticed their dogs doing the same thing. And the smallest owner can tell you he is hiding it and will dig it up some time. But if he hides it carefully, he must think a great deal of it; perhaps he uses it for something beside food. And when curiosity runs high tell them about the bone being a tooth brush for the dog.

Another child in the same class had something to say about his Patsy always staying by his master's hat. Again significant, and therefore to be impressed. If Patsy will condescend to pay a visit to the school, by all means invite him. Have him sit by the hat, have the children draw Patsy and the cap, (mass drawing, using black crayon), or model them. Among all the animals this is pre-eminently and probably exclusively a dog possession—the propriety sense. Go on emphasizing worthy stories, but a mass of material such as these children bring together in the form of stories, is productive of little of the educational training possible unless the teacher has in mind a basis of selection. Impress those stories that emphasize.

1. Right feeling toward animals.
2. Intelligent care of animals.
3. Special intelligence or lovable trait of some pets.

4. A story having dramatic capabilities.

5. A story that lends itself to free cutting.

6. One that lends itself to illustration for reading purposes.

To give direction to things taught, and spirit and tone to the work, tell a story yourself occasionally. There are some things not worth telling. "It is not intended to give the natural history of each animal pet in the series, and great care must be taken not to allow the lessons to grow with common places that everybody knows, or run off into details of technical and superficial interest that it makes no difference whether anybody knows or not. People may live long and die happy without ever having lumbered their minds up with such ideas as, "a chicken has three eyelids," "a dog is covered with hair," "a cat has five toes on the front feet and four toes on the hind feet," and so on *ad nauseum*. There are plenty of common sense, valuable and interesting things to be learned about animals to occupy the time, and we may leave all details of comparative anatomy to special courses in colleges or medical schools."

—HODGE: "Nature Study and Life."

The following from John Burroughs is suggestive: "The boy who caught the squirrel in his wire trap had a very bright and nimble dog that seemed to be very sure he could catch a red squirrel under any circumstances, if only the trees were out of the way. So the boy went to the middle of an open field with the caged squirrel; the dog, who seemed to know what was up, dancing and jumping about him.

The dog was drawn back a few yards and the squirrel liberated.

Then began one of the most exciting races * * * * The squirrel had all his wits about him and kept them ready for instant use. He did not show the least confusion. He was no match for the dog in fair running, and he discovered this fact in three seconds. He must win, if at all, not by taking a straight course for the nearest tree, but by a zig-zag course, yea, a double or treble zig-zag course. Every instant the dog was sure the squirrel was his, and every time he was disap-

pointed! * * * * The squirrel dodged this way and that. The dog looked astonished and vexed. Then the squirrel issued from his enemy's hind legs and made three jumps for the woods before he was discovered.

The dog seemed to redouble his efforts. He would over shoot the game, or shoot by it to the right or the left. One leap more and the squirrel was up in a tree, and the dog was overwhelmed with confusion and disgust. 'Not catch a squirrel in a field like that! Go to! I will have him yet!' ''

Suggested Expression Work (of the above).

Free cutting; telling what they have cut.

Tell the story in mass drawing (using black crayon).

Children play the story as the teacher tells, showing the nimble-footed, quick-dodging squirrel, the slower dog. This is excellent work to train a child in alertness. If he is not quick the dog will really have him. As the children become accustomed to illustrating stories with their play, have a child tell the story, thus giving him the benefit of the language drill and the practice in consecutive thinking.

Have many of the "true stories" told by the children, continuing to select on the basis suggested and to use those that are valuable for expressive work.

Encourage the children to bring their pets to school with them.

What must the nature-study teacher do when a dog comes to school? Just treat him with manners proper to show that dog visitors are welcome; give him a comfortable place to sit, and let him make himself at home. Do not think you must fall to and have some sort of an anatomy lesson about toes and eyelashes; children need humanizing not anatomizing. But do have them cut him or model him in clay. They will think more of him.

If the children are interested in this work with pets in a human, natural way, you will have many of these visitors invaluable not only from the nature standpoint, but in giving that touch of naturalness and the home feeling that we all seem to strive for and seldom get. One good, old-fashioned

dog will dispel more artificial school atmosphere than any number of blackboard decorations, and please and teach the children vastly more.

In one First Grade a great St. Bernard gravely guided the smallest little girl in the room to school each morning and home again after the session. He was adopted by the school, or, perhaps, he adopted them. Whichever the combination, those children will all think more of the noble old dog than of any other feature of their first school days and all dogdom will be the gainer.

Have a pet for the room. Almost anything that is available and practicable. If there is a cat in the building, invite it to come to the room and take its naps in the sunny windows; train the children to treat it well, to share a little of their lunch with it, to see that it has a drink of water in a convenient place. Name kitty, have the class feel a sense of ownership.

One little First Grade had a canary bird for which they cared. The morning bath was a never failing source of delight to the children, and the bird cage on the desk of an unruly little boy, for even a few moments, seldom failed to communicate some of the good spirits and cheery manners of its little tenant to the child. Do not keep the cage away from the children. Let them cut the papers for the bottom of it, get the water for the bath, give the bird its seeds, all that a child can do, and he can do a great deal if he has someone to see that he does it. These real things make the best lessons for the children.

A white rat delighted another room. The rat being very social and developing and manifesting a decided wish to play with the children, which they were not slow to discover, was a favorite. In another First Grade the children were encouraged to bring their pets to school, and a couple of young pigeons put out their feathers to the delight of the children who became the warmer friends to all pigeons thereafter.

The large boys in another building built a substantial rabbit house for the First Grade children. This, with its yard fenced in with wire, occupies one corner of the grounds. The

children store leaves in the fall for Bunny, feed him, water him, play with him and love him.

This is no attempt to advocate the keeping of pets that were never intended to be kept in the house, that become a nuisance there—like a rabbit or a guinea pig—they are outdoor animals which, if they can be housed in the school yard, have an excellent influence on the children.

In preparation, read Shaler's "Domesticated Animals," on the dog, the cat, the horse. (These are the ones most likely to be brought up.) Also Hodge; "Nature Study and Life," chap. III. Be prepared with one good story illustrative of a valuable trait in a horse, a dog. The readers are full of them.

The following stories are suggested as calculated to produce right feeling toward animals.

Benjy in Beastland. The Story Hour. Graded Literature III. (First and Second Grade.)

Moufflou. The Story Hour. (Second Grade.)

FURTHER REFERENCES.

Pit-Pat (cat story). Lights to Literature II, p. 37.

Robin's Grumble (against cats). Lights to Literature II, p. 40.

The Horse. Cyr. Reader III, p. 185.

Stories of Dogs. Reader III, p. 187.

The Squirrels That Live in a House. Cyr IV, p. 149. (Good).

SONGS.

Pussy Cat, Pussy Cat. Eleanor Smith. Primer, p. 36.

Mr. Rooster and Mrs. Hen. Gaynor. Songs of the Child World, p. 91. (Second Grade.)

Harvest of the Squirrel and Honey Bee. Gaynor. Songs of the Child World, p. 65. (Second Grade.)

PLANT RAISING.

First and Second Grades.

"No number of object lessons got up as object lessons for the sake of giving information, can afford even the shadow of a substitute for acquaintance with the plants and animals of the farm and garden, acquired through actual living among them and caring for them. No training of sense organs in school, introduced for the sake of training, can begin to compete with the alertness and fullness of sense-life that comes through daily intimacy and interest in familiar occupations."

—JOHN DEWEY.

LESSONS WITH PLANTS.

General Plan of the Work.

1. Flower grown in the schoolroom.
2. Flower raised from seed. Home planting and flower show.
3. Window or school yard garden.

Schoolroom Flower.

A bright, hardy, little, red geranium is the very best thing for the babies. Be sure you start with a sturdy, well-potted, little plant.

Suggestions for the Care of the Geranium.

1. Be sure that the flower pot is large enough and that there is plenty of good soil.
2. Keep the plant in the sun. Turn it around every day so all parts will be exposed to the light. Then the plant will not become one-sided and all the leaves will be green.
3. Watering—soak so that *all the soil* is wet, then let stand until the surface soil gets dry.
4. Keep the leaves clean; wash them.
5. Keep the surface soil fine and loose.

Suggested Method.

(Let it be understood from the beginning that it is not the attitude of the scientist, getting at the shape of leaves, parts

of flowers, etc., that we are trying to get the children to take toward their plant, but rather to teach them the things the dear old grandmother knows *who can raise the best flowers in the neighborhood.* It is knowledge in both cases and both have studied to acquire it, but it is the "grandmother" variety we are going to try to teach the children.

Have the children realize thoroughly that the plant is yours and theirs together, and that they and you are going to care for it.) Do they know where the plant would like to stand? (The sunniest place in the room.) Make class exercises of the watering, loosening the top soil and washing the plant's face until the children become interested in watching for the plant's needs; have them do these things as class exercises until they can do them well. Then you may turn it over to one of the before-school duties. When the blossoms come do not pick them to pieces, do not try to learn technical terms about them, just get to know them by sight and smell. (See sense games; trees, September and October.) Make much of taking off the dead leaves, have it done in a class period by one of the class. Be sure you wait until the leaf is well ready to come off, like the leaves of the tree.

Have the children paint the plant; free cutting of the pot; the pot and the plant; paint a leaf, lay it in lentils. Free cutting of a leaf.

Flower Raised From the Seed. April.

The dwarf nasturtium seems best for this work in these grades. The seed is large and easily handled, the plant is hardy and showy, the blossoms appear from 45 to 60 days after the planting and are continuous throughout the summer.

Give the children as many seeds as you can for the home planting with the two following conditions:

1. That all the work of planting and caring is to be done by the children.

2. That one plant is to be raised in some sort of a pot so it can be brought to the school for the June flower show.

Keep one or two plants growing in the school room or in the yard to show the children how to take care of theirs. Get the

home people interested as much as possible. Let the children bring their plants when it is convenient, and question about them, how many seeds came up, how often are they watering, keeping in the sun, etc., so that the subject is kept fresh in their minds—it is quite a stretch for the patience and faith of a little child, from the planting of a seed to the blossoming of the plant. If this work is going well there will be constant reports offered at all times. Be sure something is wrong if this spontaneous news of the welfare of the plant does not come, and do something about it.

Give class lessons in the planting of the nasturtium before the seeds are distributed. The following are some suggestions for such lessons:

1. Have the children sift the soil. (A piece of wire door screen or an old flour sifter and a paper spread on the floor will do.) Sprinkle the soil 24 hours before so it will be moist.

2. Have the children place a round stone or a piece of broken flower pot over the hole for drainage.

3. Have the children fill the pot with soil; firm it.

4. Have the children decide the number of seeds to plant.

(One plant to a pot is enough but best put in three or four seeds; some may not come up.)

5. Children make holes one inch deep with pencil, put the seeds in the hole, cover, firm.

6. Plunge pot in luke-warm water, have the children feel, have them watch until the surface of the soil is wet.

7. Set in shaded place.

As the soil shows dry on the surface plunge again. *Be sure that the soil does not get dry while the seeds are germinating.* As soon as green shows put the pot in the sun. If you prefer from this time on water from the top, although a florist continues to plunge.

Give each child seeds to plant at home. Have a flower show the last of June, at which these home grown plants are exhibited.

At the flower show sing the songs the children know, and have them recite their little flower and planting poems.

Window or Schoolyard Garden

When possible, the ideal garden for the little children is the individual garden of about a square foot in size. The following is a brief history of First Grade gardens at No. 61, Linden Avenue and Konig Street:

The bricks were removed 18 inches back along about 90 feet of the yard wall and two loads of soil were hauled in to cover the sand which was under the bricks. This, of course, made a light soil but deep enough and rich enough to raise what was put in it. Each child then measured off his garden, one foot in length, and set his stakes to show his property, wrote his name and placed it on the fence at the back of his plat. He had about a square foot that he could work. The children were encouraged to bring a little good soil from home to put on the top of his garden, if not more than a cupful—this improvement gave him an added interest in his property, and enabled the teacher to see what idea the children had of good soil. They smoothed the soil and planted the seeds—the four dwarf nasturtiums at the back—to allow for some seeds that might not come—here the value of the previous schoolroom lessons in so planting is seen—then they planted a a row of early, round, red radishes in the front. (Be very sure that you have the earliest variety of the round, red radishes, they only require three weeks to produce radishes big enough for pulling.) The children kept the weeds out of their gardens; they kept the soil fine on the top as they must on the surface of the house plant, and they watered them. (This soil was so light as to make watering necessary—it is usually not needed when the soil is kept loose and fine on the surface.)

Have the individual garden wherever it is possible. It is impossible to go into reasons, but it is the solution of most of the problems in the garden work.

The tool necessary is the common five-fingered hand-weeder.

If the yard garden is impossible have the window garden. Make the boxes as long and as wide as the windows ledge will allow and at least eight inches high. (Send dimensions and the number of boxes wanted to the Group principal by January 1.) It will be more satisfactory to plant only one kind of plant in the boxes — all radishes in one box and dwarf nasturtiums in another. Have the children take care of them. Be sure they are well soaked Friday.

Paint the radishes; play feeling games with the leaves. (See September and October tree outline.) Play smelling games with nasturtium blossoms. Paint nasturtium leaves; the blossoms.

Story.

The Story of the Morning-Glory Seed. Stepping Stones III, p. 216.

The Pea Blossom. Anderson. Stepping Stones III, p. 17.

Talking in Their Sleep. Edith Thomas. (Second Grade.)

Poems.

Waiting to Grow. Poetry of the Seasons.

The Little Plant. Kate S. Brown, in the Child's World. (Excellent planting poem.)

Songs.

In My Little Garden Bed. Finger Plays.

The Bumble Bee. Gaynor. Songs of the Child World. (Second Grade.)

Teacher's Reference.

Hodge: Nature Study and Life, Chaps. VI, VII, VIII, IX.

Read also: The Garden of a Commuter's Wife. (Public Library.)

Mary's Garden and How It Grew.

TREES.

"Dance, little leaflets, dance,
'Neath the tender sky of Spring;
Dance in the golden sun,
To the Tune the robins sing."

General Plan of Work for Year.

1. Choice of trees to be studied throughout the year. First Grade, one tree; Second Grade, two trees.
2. Recognition of trees by:
   1. Sight; the tree as a whole, the leaf, the flower, the fruit.
   2. Sound.
   3. Touch; the bark, the leaves, the flower, the fruit.
   4. Smell; the leaves, the flowers, the fruit.
3. Seasonal changes.
4. Growth of the tree from the seed.

September and October.

Choice of Tree—Choose a tree easy of access, in the schoolyard if possible.

Take the children out the hour you plan to give to the Nature work in order that they may judge of shade conditions. Have them look for the tree they would like best to listen to stories or play games under. Let them run to the trees of their choice. Recall them and question why the special one was selected. Does it give cool shade? Are there comfortable seats under it? Does it look strong?, etc. When the tree is selected identify it, giving the specific name, white maple, American linden, etc. Take them to the tree chosen and tell them a story. This is their tree-warming.

Recognition of Trees by Sight. (The tree as a whole.)

Do not ask children how they know the tree.

Suggested Method

Provide children with scissors and paper, take them to the tree; cut it. Have the cuttings colored under the tree if

possible, if not, have the children match something with the bark and the leaves, and color in the schoolroom. * * * * Have the class decide which cutting they like best, giving one reason for their choice. Pin this one in a conspicuous place. Continue these tree cutting lessons throughout the year, always having the children select the best giving a reason, thus calling attention to points to be observed. These points will be incorporated into later cuttings. Continue to cut and paint the fall tree until the children express themselves with a fair degree of clearness. * * * * For cutting suggestions see drawing outlines, p. 6, First Grade. In all field lessons look for brothers and sisters of the tree. Have the children also look for brothers and sisters of their tree at home and on the way to school, bringing leaves, that you may correct cases of mistaken identity.

This work in training to see true shapes continues throughout the year, it is of slow growth for all of us. When, toward the close of the year, the cuttings are better done they will show in a general way:

1. What part the trunk is of the height of the tree. (½, ⅓, etc.)
2. What part the greatest width is of the height of the tree. (⅔, ⅓, etc.)
3. Where the tree is widest. (Half way to the top, etc.)
4. The shape of the top.

(These are the points that make for the shape of any tree, and the teacher will have them in mind and gradually lead the children to see them as their number work progresses so they are able to see proportions.)

Recognition of Leaves By Sight. (Suggestive Method.)

Provide each child with one or more leaves from his tree. Have him look at them closely. Place all the leaves in the desks. Choose ten children to find leaves of the same kind in a boquet of mixed leaves, and present them to other children who must decide if they are right. Play the same game many times, mixing the leaves with all sorts until you are satisfied the children can recognize their tree leaves wherever they see

them. Ask no explanations of how they know them. Have the game move along briskly.

Have the leaves drawn, cut and colored; laid in lentils.

If fruit is found on the tree follow suggestions for playing seeing games, under leaves.

Recognition of Tree By Sound.

Poplars and evergreens are the only trees that we can identify by the sound they make, but teach the children to love the song the tree sings when the wind blows through it. Before the leaves have fallen, when the children are under the tree for cuttings, have them close their eyes and listen to what the tree is wispering. Is it south wind that is whispering in in the tree today? North wind? (See "Winds.") Does south wind sound the same as north wind? To whom is the tree whispering; to the sun; to the birds? Just visiting among themselves? Or are they telling secrets to the old tree? And what do you think they are saying? For "we have a right to a poetic interpretation of nature. The child comes to know nature through its imagination and feeling and sympathy." Bailey. The child who exclaimed, "All the leaves are singing to-day they're so glad the sun is shining!" made an interpretation as true to nature and as charming in its fancy as the poet who made the leaves say.

"Dear Father Tree, behold our grief:"

Open to the child the happiness which comes through using his own powers of imagination and feeling; *then*, when he is able to appreciate it, teach him what others have heard the tree say. *This is the only way whereby nature literature may be interpreted through the experience of the children and not compel them, "after the manner of Aesop's crow, to adorn themselves with strange feathers."* "Men must be lead as far as possible to draw their wisdom not from books, but from the consideration of heaven and earth, oaks and beeches." Comenius.

Suggested Forms of Expression.

1. Play—The sound and motion of the trees are inseparable; associate the two.

In their little marches have the children play they are the tree when it is so still that it is not even whispering, again be the tree when it is singing the birds to sleep; when it sings a bold, loud song.

This calls for action imitating that of the tree which produced the sound. Very straight for silence, gently waving the arms when the tree sings softly, tossing arms when the tree shouts.

2. Imitate the sounds of the tree at different times.

Recognition of the Tree By Touch. (The Bark.)

Have the children feel the bark of the tree; then blindfolding a child lead him to a tree when he decides whether it is the one he felt at first.

In playing this of course barks of decidedly different degrees of roughness must be used.

Recognition By Touch. (The Leaves.)

Play a sense game.

Have the class feel the leaves carefully, close their eyes and feel again, to see if they think they would know them.

Select a number to come to the front of the class.

Have them close their eyes.

Using, say, two kinds of leaves, the one of the class and one other, place each leaf in the hands of different children; when the two children who receive the leaves first have satisfied themselves the teacher passes them to two other children until each one in line has handled one leaf.

Vary the ways of receiving decisions. The children may open their eyes and tell the class, one by one, what they thought they touched; *the class deciding* if they are right or wrong. Or eyes may remain closed while the teacher asks all who thought they touched their tree leaf to raise hands. Children whose eyes are open who know if they are right will lead them to their seats.

Always have those who have failed feel of the leaf again; do not, however, test them immediately after, as the original impression, unmixed with others, must be deepened.

To Recognize Leaves By Odor.

Play sense games, substituting smelling for feeling.

All these sense games must be played over and over; they are not lessons to be recited and all accounts closed when a correct answer is given; they are for continued sense training.

Seasonal Changes of the Tree.

Watch for the changing of the color of the leaves and their falling; encourage the children to bring in the very prettiest leaves they find each morning; press them and put them up in the room. (Press the leaves with a warm iron on which a little ordinary wax has been rubbed. This produces a lustre which is somewhat unnatural, but the leaves will keep nicely and are very attractive; small twigs can be preserved in this way and make pretty ornaments for the room during their season.)

Teach the children to make wreaths out of the leaves; encourage them to play in the fallen leaves. If they are not swept up as fast as they fall, have the children see where they are taken by the wind. What are they covering? Are any also used for blankets at the children's homes?

(Many of the children have seen them used to cover roses and other flowers.) In the field lesson find the sleepy leaves and see what they cover.

Under the tree itself tell the story, "How the Leaves Came Down," Susan Coolidge. *When the time is ripe for it*, teach a favorite stanza or two to the children.

THE FIELD LESSON.

September and October.

The field lesson, with trees as the central topic, is for two purposes—a general and a specific.

The special aim is a step toward the accomplishment of the general and also considers the teacher's comfort in conducting the lesson.

Classes of children, especially those not accustomed to field work, are apt to scatter so it is hard to keep track of them and there is a time when they first reach the woods, when

they seem at a loss to know what to do besides shout. Now, there does not seem to be anything radically wrong in this noise, but it may disturb possible neighbors and we can do away with it if we wish, without trouble to ourselves or ruffling the tempers of the children, as follows :

In a class room lesson:

1. Give a few definite things to look for.
2. Give a few definite things to bring back to school.

These things are the outgrowth of previous lessons and are the ostensible reason for the trip, the greater aim being kept in the background.

Have the First and Second Grades in the fall:

1. Look for brothers and sisters of their trees.
2. Bring home the prettiest leaves they can find. Press them and put them up in the room.
3. Bring home any nuts they may find.
4. If there are squirrels in the woods take some nuts for them. Let the children see how near they can coax them.
5. Listen for birds.

On another lesson:

1. Bring home the prettiest leaves they can find.
2. Look for the fallen leaves. (A windy day is best for this trip.) Are there any of last year's leaves near? What are they making a nice blanket to cover? What will pat the blanket down and tuck the seed babies in for the winter's sleep? (They have heard the same little fingers pattering on the windows (rain) and they have seen another beautiful white coverlet that will press this one yet closer (the snow).

Sing songs and play games. Make wreathes of leaves.

While the general aim must not be discussed with children, it is, nevertheless, most important that the teacher have it clearly in mind, comprehending from the start that while the beginnings are now, the growth reaches on into the years that are to come influencing the actions of men and women who

are the little children now. Briefly stated, it is this—that children may come to love the great tree world, a beautiful, health-giving, soul-restoring world—to love it actively because it is a real world to them to which they turn; so that the woods may come to take the place of the jading, questionable ways of spending holidays. Instead of Coney Island, a day spent in healthy, hearty exercises and games in the woods. It is one of those "large interests" we cannot give children too early. The study of their special trees, the isolated forest trees that are serving as shade trees, is not an end when considered in this connection, but a means which serves to introduce the children through a loving interest in their own special tree to the tree world. It is the first step in the acquaintance and the second step is the field lesson, which takes them to the home of the trees—the woods. City children need to have this world opened to them, country children should be lead to appreciate it. Make as many pleasant associations as possible. Play games. Play tree-tag, when everyone must touch a tree except the one who is "it," changing from tree to tree, when the catcher may tag anyone not touching a tree. The one so caught must take his turn at being "it." Have older grades play "maple-tag," which, as its name suggests, means that all find maple trees to touch, being liable to be tagged if they are not touching trees of this kind. Or make it oak trees, or pine, or anything you choose and the woods furnish.

The games do two things; teach to identify trees and suggest amusement to children.

When they have done the special things they came to do and are tired of the games, find the prettiest place of all and eat the simple lunch the children have furnished—just an apple; one a piece will do, or a box of wafers. Sing some of the school songs they know.

Nothing suggests picnic so much as refreshments, no matter how light, and with games that can be played in the woods and a lunch, we have all the ingredients of the picnic. Be sure the charm of this day will suggest to these children a way of spending other pleasant days.

Continue looking for the colored leaves, pressing and putting up some of the prettiest. Also continue to note the fall of the leaves; what kind of nights bring down most? When the wind is high and leaves are blowing through the air, call it to the attention of the class, if they do not forestall you and bring it to your notice. Where does the wind finally drop them? Continue to look for them in field lessons and encourage the children to tell you where they have seen them lodged. Tell them the following story, teaching the stanza the children like best.

LEAVES AT PLAY.

Scamper, little leaves, about
  In the Autumn sun;
I can hear the old wind shout,
  Laughing as you run.
And I haven't any doubt
  That he likes the fun.

When you've run a month or so,
  Very tired you'll get;
But the same old wind, I know,
  Will be laughing yet,
When he tucks you in your snow-
  Downy coverlet.

So run off and have your play,
  Romp with all your might;
Dance across the autumn day
  While the sun is bright;
Soon you'll hear the old wind say,
  "Little leaves, good night."

—SHERMAN.

When the leaves have fallen from the tree, see if the children can still tell three brothers and sisters, or, in other words, if they can recognize the bare trees.

Suggest, through questioning or otherwise, how light and straight and strong the tree must feel now that he is not

holding the leaves out on his arms, and how he looks as if he could stand any storm that may come.

Note change in the sound of the tree.

Let us listen to the song the tree is singing these windy days, when he is all ready for winter and waiting for it to come. What is he saying now? And to whom is he singing? Does he say anything to you? Can you make the song the tree sings?

Suggested Form of Expression.

1. Cutting and coloring of the bare tree.
2. Drawing of the bare tree.

(Always discuss the work with the children, having them select the best ones. Growth should show through keener observation an increased skill of expression.)

TWIG LESSON.

Suggested Method.

What has the tree been doing all summer? (Growing, shading, looking pretty, singing may be some of the answers.)

But the tree has had a secret all summer. Perhaps the leaves may have whispered it to the birds. I do not know. Or the wind may have heard the leaves whispering it as he went through. I do not know that either. Or the merry little yellow sunbeams may have seen it. They danced around among the leaves. But, if they did, they did not tell me. Maybe the little black ant, creeping around the tree, found it out. But, if he did, he never told anyone that I know.

Not one of them told me, but I found it out for myself one day after the leaves were gone.

And to-day I have begged a few little branches of the old tree, telling her what sharp eyes you have, and that I was sure you would find what she has been doing so quietly all this time.

And the children never fail to find buds, although they may not know what they are called.

Have them count the buds on their twig; think how many the old tree has made, and then how she must have worked to do all this.

We will not harm what she has worked hard to put away so snug and tight, but wouldn't we like to know what it is she has wrapped inside? And what she is going to do with them?

But, while the children must draw the inference that there is something very precious in the buds and should be curious to know what it is, *do not let them dissect them, and do not*, at this time of the year under any circumstances, force the buds in the room. This subject is continued in following months.

Evergreens. (Before Christmas.)

First grade—One tree; spruce.

Second Grade—Two trees; spruce and pine.

Have the children recognize the leaves through the senses of

1. Sight. 3. Taste. 5. Sound (if possible).
2. Smell. 4. Touch.

Connect Christmas sentiment with the trees through song and story.

Suggested Method.

Provide yourself with good-sized branches of the evergreen to be studied and any others that may be convenient; get the cones also if possible. Have the children bring evergreen twigs. They find them on the ground where Christmas trees are for sale. Other evergreens besides the ones selected for special study, are necessary in order that sense games may be played.

Different kinds of evergreen are common in the suburbs, and the superintendents of the different parks respond most courteously and generously to requests for such material. It is very easy to have on hand through the contributions of the children and specimens obtained from the parks and surrounding country, the following:—

Spruce, a branch two or three feet long.

Pine, one or more of the species.

Cedar. Arbor vitæ. Hemlock.

It is indispensible that the children have some idea of the size and shape of the tree. Is the spruce as tall as their own tree, is it the same shape? Here the children who bring the specimens help out with their knowledge, but even they should come to realize that the Christmas trees are but the baby trees—the old trees would be so big you could not get them inside the house, many of them are much taller than houses.

To impress the shape, draw a picture on the board. (Prang Drawing Book No. 6.)

Play sense games of seeing, smelling, tasting, hearing and touching. (For directions, see outlines for playing sense games. September and October.)

In playing the game have the children feel of type tree, say spruce, only. When they are lined up in front of the class, the game shall be to tell whether they touch spruce or not. Be sure those at the seats see which ones touch spruce, if that be the type tree, and which ones touch something else, *and that children at the seats decide which are correct.*

Have the games go on with snap.

The following order is a good one for the touching game, first placing with the spruce the evergreen most unlike it, then one differing less, and so on to the one most like it.

Spruce.
White pine.
Spruce.
Arbor vitae.
Spruce.
Austrian pine.
Spruce.
Hemlock.

The following order is better for the smelling games:

Spruce.	Spruce.
Arbor vitae.	White Pine.

For the listening games, wave one of the large spruce branches in large circles. Here the necessity of a good-sized branch is seen, the smaller ones will not give off the sound the

trees make when the wind blows through them, while the large branch produces an excellent effect. A handful of white pine twigs will give a very different sound, as will a branch of oak that still retains its leaves.

Have the children listen to these sounds with their eyes open, then, closing their eyes, tell which tree is talking.

Tasting Games. (If thought desirable.)

Played as in the touching game, substituting tasting for touch. Taste the leaves at the seats. Arrange for a little time to elapse between the first and second tasting, or the strong flavor which remains in the mouth will prevent the recognition of any other.

If open cones have been obtained, have the children hold them high and shake them to see the seeds fly out.

Have the children find the leaves on the tree; they are so unlike those of the deciduous trees to which they have been accustomed that they may fail to recognize them as leaves at first.

Why are these leaves fine for a tree that keeps them all winter? (Being so needle-like the snow and wind can slip through them as it could not through the leaves of their tree.)

Has this tree any little friends who love it? (Little boys and girls; little birds.)

After all these sense impressions of the evergreens, tell "The Story of the Forest," found in Story Hour.

TREES.

January and February.

During the cold and storm and stress of these coldest winter months, how are the little buds coming on? Invite a few of them indoors to see if they can tell you. (Unless the tree is a large one, do not try to have more than a twig to each two children.)

Suggested Method.

Have the children tell you why they themselves are dressed so differently now from the summer time—to keep the cold out; why they button their coats so tightly when the

very cold days come. Recall the little buds they studied in November.

Find if the little buds have a coat. More than one. Are these little bud-coats fastened tight? Feel carefully to see. Can you get your finger between the coats? A pencil point? If your coats were fastened as snugly, do you think the wind could get in?

But what else do these buds have to stand? (The same things the children do when they come with umbrellas—the rain and snow, of course.) And how do the little buds get on without umbrellas? How do some of you get on? (Raincoats.) And how do you know if your raincoat is a good one? (If the rain does not come through.) If some one can think how, you may test this little fellow's raincoat, and some one will think to drop water on the bud, holding it as the old tree holds it, and dropping the water as the water falls on it out of doors. The water will roll off, satisfying the children that the bud has as fine a raincoat as any of them.

But there is one thing more that sometimes troubles us—that waits for us around the corners and whistles for us to come on. What does he do to your hats? And don't you think he may try to get the buds off the old tree? Look at your twigs carefully and see how many buds are there. Now, you may be north wind and see how many buds you can get off. And the wonderful adequacy of the little buds to meet the hard conditions, puts the children in a healthy attitude toward nature, not one of pity, but one of admiration, full and unbounded, for even these little buds, doughty little fellows, are well equipped to go on through to the end and perform their work.

Suggested Forms of Expression.

1. Continue to play the tree in different kinds of weather.

Play you are the tree when the wind whispers so softly that the tree has to keep very still to hear what the wind says.

Play you are the tree when old north wind and the tree are having a frolic.

The tree is singing a loud song; show how it makes its song. (By the waving the branches violently, etc.)

2. Paint the bare twigs.
3. Cut the bare twigs; color them.

First Grade. (March and April.)

In Baltimore the buds burst during these months. The children should see the change in color, should discover what the old tree has been hiding all winter inside these little coats. They should be glad when the tree makes shadows enough for them to get under, for now the lessons under the trees may be resumed as often as the weather permits.

There is just a right time for the lessons on twigs in the spring, which is as the buds burst; otherwise the children will not see the connection between the winter, and the spring and summer life.

It is impossible for an adult, and many times more so for a little child to appreciate what is packed away in buds, unless he sees the leaves and flowers unfold before his very eyes. It is one of life's miracles and is not credited in the heart, save it enter through the senses. * * * *

Suggested Method.

When the children begin to leave their coats unbuttoned, ask them what beside little boys and girls were wearing coats in the winter? Why do the children leave their coats unbuttoned? (So warm, of course.) Have the little buds begun to unbutton their coats yet? (Bring some into the room.) Would the boys and girls like to take their coats off altogether? (Doubtless many of them would.) Then why do they not do so? (Usually their mothers insist that they shall keep them on.) Do you think the little buds may be getting impatient like the little boys and girls to take off their coats. Perhaps their mother is making them keep them on, and she may be making them keep them buttoned tight long after the children have loosened theirs. When a cold day brings wraps out again, call the attention of the children to the trees. Could she put the coats on again if the buds had taken them off?

When the buds begin to burst, have some brought into the room, for close examination, during the different stages of unfolding.

How many coats are there? Find something the color of the outer ones, the inner ones. What colors are they?

What have they been hiding all winter? (Some of the children will doubtless answer leaves, but you will have some of the old pressed leaves left from last fall which you can present to the children for their bewilderment,—for that guess, "which is often more fruitful than an indisputable affirmation," because *it leads to further insight into the truth.* And, with most children, it is a guess that these are leaves, the leaves and flower being too small to suggest what they are from their appearance. Leave the children with curiosity well excited as to what they really are; then will you have the tree closely watched and reports galore of changes.

This is the time for twigs in the schoolroom, to keep closer watch of the unfolding of the buds.

When the development has progressed sufficiently to show the leaves beyond a question, plan another lesson.

Where are the coats? Can you find where the coats were? (They have left scars, usually spoken of as rings, which the children may discover. Do not force it, however, if they do not.) How many leaves were in the bud? What color are they to-day? How long are they to-day?

Suggested Forms of Expression

Cut the tree; color it. Be careful to express the change in color. Paint a twig

Continue to follow the development of the buds; on some trees the blossoming takes place before the leaves appear, when it will be the flower buds that develop first; on others the leaves and blossoms come together from the same bud; on still others, as the linden, the flowers are late coming; but, regardless of the order of the changes, give lessons when decided changes occur. This means that you must be a close observer, or the beauty of the unfolding of the buds will be lost to both you and the children.

Learn over again to recognize the tree by

1. Sight.
2. Sound.
3. Touch—both bark and leaves.
4. Odor.

For suggestions, see outlines for September and October.

The Flowers.

Learn them by sight and by odor. (See sense games in September and October outlines.) If possible, see some of the visitors that come to the flowers (the bees, flies, etc.); tell any pretty child-stories you may know about the blossoms. This seems sufficient. Do not dissect them, do not teach technical terms, do not teach things in which you may be interested because you take to classification—children do not.

Growth of the Tree From the Seed.

Have the children watch for the forming of the fruit on their tree. For its falling. How far from the tree has it fallen? Who can find the one the farthest of all? Look for some that have started to grow, mark a few and watch them. Have the children take some to the schoolroom and plant them as nearly like the old tree plants them as possible. How deep did she plant them? In what kind of soil? Are they doing well? In the case of the tree it can well lose many of them, so it is best that the birds and the insects get some, and that others do not grow because the proper conditions do not offer. All this shortage has been allowed for in the super-abundant harvest. But have the children watch some seeds that do grow, and, imitating the conditions, start some of their own in the schoolroom, transplanting them later into the school-garden. Silver and red maple germinate in early part of June.

Care of the Tree.

As occasion arises, call the attention of the children to the effects of bruising or cutting trees, the loss of sap. Have them look on other trees for the scars left from former injuries.

If, at the close of the year, we can look back on material voluntarily brought us before school, on information given with all the eagerness that comes when confidence and common interests exist in school life, to little faces upturned to an old tree asking of it its secrets, and, best of all, to happy hours we have spent with children under that same old tree, then we may be assured that our work has been a success.

References.

Leaves at play. Frank Dempster Sherman. Little Folks' Lyrics. (Quoted in text.) (Windy Day in Fall.)

A Story of the Forest. The Story Hour. (Christmas.)

The Story of the Poplar. Nature Study in Elementary Schools. Wilson.

The Tree. Bjornson. Lights to Literature, III, Nature in Verse, p. 26.

A Story of the Wood. Graded Classics, III.

The Boy Who Hated Trees. Graded Literature, III. (Second Grade).

Whispering Pines of the Forest. Cyr, II, p. 126.

How the Leaves Came Down. Susan Coolidge. Through the Year, I, p. 55.

Linden and Oak.

Bancis and Philimon. Cooke's Nature Myths, p. 71.

Wilson's Nature Reader, II, p. 220.

Oak.

How the Oak Tree became King. Through the Year, II, p. 54. Stepping Stones to Literature, III, p. 174.

Poplar.

Story of the Poplar. Wilson's Nature Reader, II, p. 230.

The Poplar Tree. Cooke's Nature Myths, p. 56.

Walnut.

The Walnut Tree That Wanted to Bear Tulips. Wilson's Nature Reader, I, p. 193. Wiltze's Morning Talks, p. 35.

The Burr. (Poem.) Nature in Verse, p. 213. (Tell or read.)

Songs.

The Tree's Friends. Gaynor. Songs of the Child World, p. 74.

The Leaves' Party. Gaynor. Songs of the Child World, p. 64.

WEATHER CONDITIONS.

"Robins in the tree top,
Blossoms in the grass,
Green things a growing
Everywhere you pass;
Sudden little breezes,
Showers of silver dew,
Black bough and bent twig
Budding out anew;
Pine-tree and willow-tree,
Fringed elm and larch,—
Don't you think that May time's
Pleasanter than March?"

SKY AND WEATHER OBSERVATIONS.

General plan for the year.

First Grade.

1. Observations and stories of winds.
   a. North wind.
   b. South wind.
   c. East wind.
   d. West wind.
2. Observations and stories of clouds.
3. Observations and stories of the moon.
4. Stories of the sun.
5. Chart work.
   a. Picture of the day. Daily record.
   b. Picture of the moon. Weekly record.

Second Grade.

1. Continue observations and stories of winds, clouds, the moon, and the sun.

2. Chart work.
   a. Picture of the day through first half of the year. Daily record.
   b. Winds; direction in a very general way. Occasional records of noticeable winds entire year.
   c. Clouds; classification in a very general way. Occasional records when cloud forms are very distinct, the entire year.

Winds.

When the north wind blows so that the children are chilled and impeded on their way to school, ask them what the wind did to them this morning. When they have told you a number of things—blew off their hats, made their noses red, their hands cold, made the leaves dance, etc.—tell them a story of the north wind, preferably one that personifies it. Follow the same plan with south wind, east wind, west wind.

Story of the North Wind, page 151; 'Round the Year in Myth and Song. (Adapted from Hiawatha.)
Story of the East Wind, page 146. (As above.)
Story of the South Wind, page 149. (As above.)
Story of the West Wind, page 145. (As above.)
Also p. 65, in the Chid's World; Poulsson.

(Direction of winds seem to be hard data for higher grades to get, therefore do not expect these little children to do much with it. But there are other things beside naming winds that are important for us to know about them. If, through simple observations of type winds, through personifying them as they do Jack Frost, children come to know some of the things Kabibanokka (the north wind) does, or the east or south or west wind, it is better than naming a meaningless direction. Some idea of direction will gradually follow through such suggestions as "Where does Kabibanokka live? Point toward his home," etc.

On other windy days call for other observations and do not hesitate to tell the same story again or have children tell it. Use the stories again and again until they are very familiar

to the children. *Connect these nature stories and poems with the phenomena that inspire them and use them after the children have observed the thing itself.*

Listen to the song North Wind sings, South Wind, etc. Whose song do they like best? Which one whispers oftenest to the flowers? Which one sings the loudest, cheeriest song in the winter? (See also "Trees.")

Teach some extracts like the following:

The North Wind doth blow,
And we shall have snow,
And what will the robin do then, poor thing?
He'll sit in a barn,
And keep himself warm,
And hide his head under his wing, poor thing.
—Old Song.

"Whichever way the wind doth blow,
Some heart is glad to have it so;
Then blow it east or blow it west,
The wind that blows, that wind is best."

In the spring, tell the following when weather conditions suggest it:

The Wind and the Sun. Poulsson; In the child's world.

Clouds. Suggested Method.

Follow the above plan with clouds. When they are very distinct, like the fleecy cloud forms piled up in the sky, have the children notice them; what do they think they look like? Make some on the board. Then tell a story.

Apollo's Cows.

Wilson: Nature Study in Elementary Schools, Second Reader, p. 4.

High above us, slowly sailing,
Little clouds so soft and white,
You are like the wings of angels,
Watching o'er us day and night. —Selected.

On bright days note the sunbeams; let them shine on the face and hands to see how warm they are. Does the little

schoolroom plant love them? How does it sometimes show it? (Let the plant stand several days with the same side toward the window and observe how it bends toward its friend, the sun). What else loves the sun? Does the schoolroom canary sing more when its cage hangs near the window? (The cage should not hang in the direct sunlight in warm weather.)

Teach some of the following:

"Little yellow sunbeam,
Tripped into the room,
Sweeping out the darkness
With her golden broom."

"'Now, what shall I send to the earth to-day?'
Said the great, round, golden sun.
'Oh! let us go down there to work and play,'
Said the sunbeams, everyone.

So down to the earth in a shining crowd,
Went the merry, busy crew;
They painted with splendor each floating cloud
And the sky while passing through.

'Wake up, little children!' they cried in glee,
'And from dreamland come away!
We've brought you a present, wake up and see!
We have brought you a sunny day.'"

"Good morning, merry sunshine,
How did you wake so soon?
You have scared the little stars away,
And driven away the moon."

Tell the following:

Phaeton, Wilson's Nature Reader; Book II, p. 36.
Graded Classics; Book II, p. 143.
Stepping Stones to Literature; Book IV.

Teach this some snowy morning :

"Old woman, old woman, old woman, so high,
You're picking your geese, the white feathers fly."

And this, another one :

"Tiny little snowflakes
In the air so high,
Are you little angels
Floating in the sky?"

Teach this some rainy spring day :

Patter, patter, let it pour,
Patter, patter, let it roar;
Soon the clouds will burst away,
Soon will shine the bright spring day,
Soon the welcome April shower,
Will awake the sweet May flower.—*Selected.*

Chart Work.

For suggestions of size and forms see diagram. Use Manila paper or tag board. Make the squares 2½ or 2 inches. Cover the squares with circles on which the picture of the day has been made. Have the children cut the circles which you have previously outlined with a compass on ordinary drawing paper. Give each child a slip containing two or three circles. Have the cutting done during a seat work period. (Do not do this yourself, it takes time from the teacher much better spent out of doors; it takes excellent cutting lessons from the children.) Cut a few circles from silver paper for the moon. In coloring the circles remember that it is an expression of "the kind of day in color" you are seeking, not a landscape or a picture of the sky ; therefore use the colors of the poets when they talk of a grey day, yellow sunshine, dark weather. Do not use colored paper. A child's expression of his observation cannot be made through the medium of colored paper, when the circles done by children often show as complex pictures as the following : at the left pale yellow, made by closely paralleled yellow lines, indicating pale sunshine; toward the middle of the day grey, made by closely paralleled black

lines, indicating growing cloudiness; then a streak of white, a snow flurry, followed by bright yellow, the sunshine after the snow fall.

In building up a chart from day to day, class co-operation is all important. From a number of devices for carrying on

1st Plan. At the close of the session when the record is to chart work the following two are offered as suggestive :
be made, five children pass to the box containing circles, secure one each, pass to their seats, take their crayon boxes and with no suggestions from teacher or pupils, picture the day as they have seen it. While they are doing this, the remainder of the class sing, or recite a poem in concert, or listen while a child recites one. When the children have colored their circles they step before the class, hold up their work, and the class selects the one that looks nearest like the day as they have seen it. The child whose work is selected gets the paste and secures his circle to the chart. The others lay theirs on the teacher's desk. In this plan the teacher does nothing but select the children—no passing of material, nothing whatever. This work requires about three minutes.

2nd Plan. At the close of the session 5 children are chosen to color circles which they make on the blackboard. They select the colored crayon they wish to use and picture the day as they have seen it. The other children are interested in watching these pictures grow. The instant the circles are colored the decision of the class is asked—"Which picture is nearest like the day as you have seen it?" The child whose picture is chosen colors a paper circle and pastes it on the chart. He does this as the children are passing out, or the children sing or recite a poem as he works.

The two methods suggested above will secure class co-operation. They are only suggestions however; introduce others that will *bring class judgment on the circle which goes on the chart.*

Chart Summary. (At the end of the month.)

The children count the number of sunny days; cloudy days; partly cloudy days; partly sunny; point to the very

nicest days of all. Why do they like that one best? Point to the darkest day; the sunniest week; the darkest week.

Further for Second Grade: What wind has visited us this month oftenest? What other winds have blown? Point to a day when a cold wind blew, etc.

The Moon.

This is made part of First Grade chart work, not that it is expected the children will be taught anything about moon phases, but because so many pretty childish fancies and so much interesting children's literature cluster around the moon. Children love the night sky. Once a week is often enough to cut the picture of the moon, when changes are very perceptible. Do not have it put up unless the children see and cut it. Have the horns of the new moon point on the chart as they do in the sky.

"Lady Moon, Lady Moon, where are you roving?
Over the sea.
Lady Moon, Lady Moon, whom are you loving?
All that love me."

(*The New Moon.*)

"If I were up there,
With you and my friends,
I'd rock in it nicely, you'd see;
I'd sit in the middle
And hold by both ends;
Oh, what a bright cradle 'twould be.

I would call to the stars
To keep out of the way,
Lest we should rock over their toes;
And then I would rock
Till the dawn of the day,
And see where the pretty moon goes."

As the children look at the night sky they will notice the stars as well as the moon. Teach a few pretty star-thoughts like the following:

"At evening, when I go to bed,
I see the stars shine overhead.
They are the little daisies white
That dot the meadows of the night.

And often, when I'm dreaming so,
Across the sky the moon will go.
She is the lady, sweet and fair,
Who comes to gather daisies there."

Further stories, myths and poems related to this topic:

Moon—Diana. Wilson's Nature Reader, II, p. 65.
'Round the Year in Myth and Song, p. 65.

Rain—The Rain and the Snow. Legends of the Red Children, p. 50.

Rainbow—The Rainbow. Legends of the Red Children, p. 45.

Sun—Phaeton Drives the Sun Chariot. Graded Classics, II.

Seasons—How the Summer Comes. Legends of the Red Children, p. 70.
How the Spring Comes. Legends of the Red Children, p. 66.
Persephone. Cooke. Nature Myths, p. 48.

Wind—Bag of Winds. Gayhy's Classic Myths, p. 137. Graded Literature, Book III, p. 13.
Odysseus and the Bag of Winds. Poulsson, in the Child's World, p. 69.

Songs—Jack Frost. Gaynor. Songs of the Child World, p. 68.

References to further literature and songs will be found in reference list at the close of the outlines, also in Course of Study in English, 1905–6.

OCTOBER, 1904

(First Grade)

Monday 3	Tuesday 4	Wednesday 5	Thursday 6	Friday 7
Monday 10	Tuesday 11	Wednesday 12	Thursday 13	Friday 14
Monday 17	Tuesday 18	Wednesday 19	Thursday 20	Friday 21
Monday 24	Tuesday 25	Wednesday 26	Thursday 27	Friday 28

OCTOBER, 1904

(Second Grade)

Picture of Day	Monday 3	Tuesday 4	Wednesday 5	Thursday 6	Friday 7
Winds					
Clouds					
Picture of Day	Monday 10	Tuesday 11	Wednesday 12	Thursday 13	Friday 14
Winds					
Clouds					
Picture of Day	Monday 17	Tuesday 18	Wednesday 19	Thursday 20	Friday 21
Winds					
Clouds					
Picture of Day	Monday 24	Tuesday 25	Wednesday 26	Thursday 27	Friday 28
Winds					
Clouds					